Clean Version of Pending Claims Under 37 C.F.R. § 1.121(c)(3)

1. A compound which interacts with the β-amyloid peptide in such a way the N-terminal loop of the peptide (amino acid residues 1-15) is blocked or destabilised, thereby inhibiting the binding of one or more metal ions to at least one histidine residue within the N-terminal loop.

2. A compound according to claim 1 which inhibits binding Cu^{2+}, Zn^{2+} and Fe^{3+} ions, but not Mg^{2+} or Ca^{2+} ions.

3. (Amended) A compound according to claim 1 which has a conformation and polarity such that it binds to at least one histidine residue in the N-terminal loop, selected from the group consisting of His6, His13 and His14.

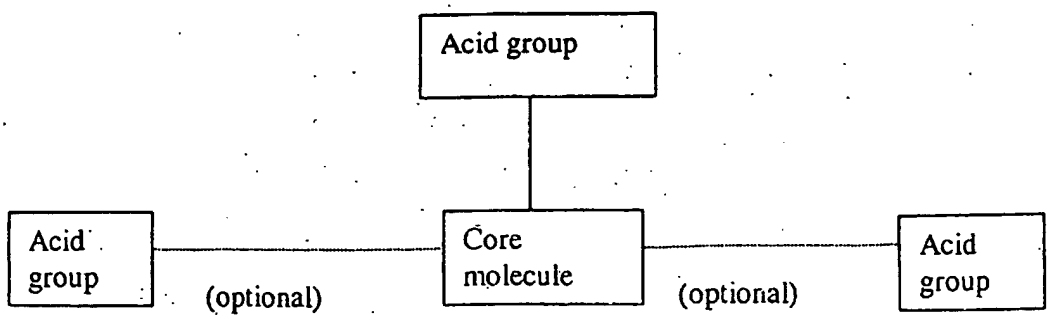
4. A compound according to claim 3, which binds to at least two histidine residues in the N-terminal loop.

5. A compound according to claim 4, which binds to at least three histidine residues in the N-terminal loop.

6. (Amended) A compound according to claim 1, which also binds to at least one additional amino acid in the N-terminal loop, selected from the group consisting of Asp7, Tyr10, and Glu11.

7. (Amended) A compound according to claim 1, which has acidic groups which interact with one or more of the His residues in the N-terminal loop.

8. A compound according to claim 7, represented as follows:



wherein the core molecule has a conformation and polarity such that the acid group(s) interact with one or more of His6, His13 and His14.

9. A compound according to claim 8, in which the acid group is selected from the group consisting of CO_2H, PO_3H_2, SO_3H, OSO_3H_2, and OPO_3H_2.

10. A compound according to claim 9, which is a molecule with one to three carboxylic acid groups, the length of the molecule being such that it can be received within the N-terminal loop, and such that at least one carboxyl group is in proximity to at least one of the histidine residues.

11. (Amended) A compound according to claim 1, which is an organic molecule, a peptide or a metal complex.

12. A compound according to claim 9, which is not a metal complex.

13. A compound according to claim 9, which has overall hydrophobic character.

14. A compound according to claim 10, which is able to penetrate the blood-brain barrier.

15. (Amended) A compound according to claim 1, which comprises, or is conjugated to, a targeting moiety, forming an inhibitor-targeting moiety complex.

16. A compound according to claim 15, in which the targeting moiety is selected from the group consisting of polypeptides, nucleic acids, carbohydrates, lipids, β-amyloid ligands, antibodies, and dyes.

17. A compound according to claim 15, in which the targeting moiety has a hydrophobic region which interacts with the tail of the β-amyloid peptide.

18. A compound according to claim 17, in which the targeting moiety comprises a fatty acid molecule.

19. (Amended) A compound according to claim 15, in which the targeting moiety targets the compound to a site defined by residues 15-21 of the β-amyloid peptide.

20. A compound according to claim 17, in which the targeting moiety is a peptide which comprises a sequence which corresponds to that of residues 15-21 of the β-amyloid peptide.

21. (Amended) A compound according to claim 15, in which the inhibitor-targeting moiety complex is able to penetrate the blood-brain barrier.

22. A method of selecting or designing a compound which inhibits the binding of metal ions to the N-terminal loop of the β-amyloid peptide, which method comprises the steps of

(i) selecting or designing a compound which has a conformation and polarity such that it binds to at least one amino acid in the N-terminal loop selected from the group consisting of His6, His 13 and His14; and

(ii) testing the compound for the ability to inhibit binding of metal ions to the N-terminal loop of the β-amyloid peptide.

23. A method according to claim 22, in which the compound binds to at least two histidine residues in the N-terminal loop.

24. A method according to claim 23, in which the compound binds to at least three histidine residues in the N-terminal loop.

25. (Amended) A method according to claim 22, in which the compound also binds to at least one additional amino acid in the N-terminal loop, selected from the group consisting of Asp7, Tyr1O, and Glull.

26. (Amended) A method according to claim 22, in which the compound inhibits binding of Cu^{2+}, Zn^{2+} and Fe^{3+} ions, but not Mg^{2+} or Ca^{2+} ions.

27. (Amended) A method according to claim 22, in which the compound has overall hydrophobic character.

28. A method according to claim 27, in which the compound is able to penetrate the blood-brain barrier.

29. (Amended) A compound which inhibits the binding of metal ions to the N-terminal loop of the β-amyloid peptide, wherein the compound is obtained by a method according to claim 22.

30. (Amended) A composition comprising a compound according to claim 1, together with a pharmaceutically-acceptable carrier.

31. A method of inhibiting the binding of one or more metal ions to the β-amyloid peptide, or of inhibiting the aggregation of β-amyloid peptide, which method comprises the step exposing the peptide to a compound which blocks or destabilises the N-terminal loop of the peptide, thereby inhibiting the binding of one or more metal ions to at least one histidine residue within the N-terminal loop.

32. A method according to claim 31, in which the compound has a conformation and polarity such that it binds to at least one histidine residue in the N-terminal loop of the β-amyloid peptide, selected from the group consisting of His6, His13 and His14.

33. A method according to claim 32, in which the compound binds to at least two histidine residues in the N-terminal loop.

34. A method according to claim 33, in which the compound binds to at least three histidine residues in the N-terminal loop.

35. (Amended) A method according to claim 31, in which the compound also binds to at least one additional amino acid in the N-terminal loop, selected from the group consisting of Asp7, Tyr10, and Glu11.

36. (Amended) A method according to claim 31, in which the compound inhibits binding of Cu^{2+}, Zn^{2+} and Fe^{3+} ions, but not Mg^{2+} or Ca^{2+} ions.

37. (Amended) A method according to claim 31, in which the compound is a complex of Mn, Fe, Co, Ni, Cu, Zn, Ru, Pd, Ag, Cd, Pt, Au, Rh or Hg, with the proviso that the compound is not haemin or haematin.

38. (Amended) A method according to claim 31, in which the compound comprises, or is conjugated to, a targeting moiety.

39. (Amended) A method according to claim 38, in which the targeting moiety targets the compound to a site defined by residues 15-21 on the β-amyloid peptide.

40. (Amended) A method according to claim 31, in which the inhibition of binding of one or more metal ions to the β-amyloid peptide occurs *in vivo*.

41. (Amended) A method of prevention, treatment or alleviation of Alzheimer's disease, which method comprises the step of administering a compound according to claim 1 to a subject in need of such treatment.

42. A method of prevention, treatment or alleviation of Alzheimer's disease, which method comprises inhibiting the binding of one or more metal ions to the β-amyloid peptide, or inhibiting the aggregation of β-amyloid peptide, by the method of claim 40.

43. (New) A composition comprising a compound according to claim 29, together with a pharmaceutically acceptable carrier.

44. (New) A method of prevention, treatment or alleviation of Alzheimer's disease, which method comprises the step of administering a pharmaceutical composition according to claim 30 to a subject in need of such treatment.